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CRITICAL

INTRODUCTION

TO THE

STUDY OF FEVERS.

READ AT THE COLLEGE OF PHYSICIANS,
FOR THE GULSTONIAN LECTURES.

By FRANCIS RIOLLAY, M.D.

FELLOW OF THE COLLEGE.

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SIR GEORGE BAKER, BART.

PRESIDENT OF THE COLLEGE OF PHYSICIANS,

THESE LECTURES,

UNDERTAKEN AT HIS DESIRE,

ARE WITH GREAT RESPECT

INSCRIBED,

BY HIS SINCERE ADMIRER,

AND VERY HUMBLE SERVANT,

THE AUTHOR.

HART-STREET, BLOOMSBURY,
JUNE 2d, 1788.

EXORDIUM.

ILLUSTRISSIME PRÆSES, SOCII, AUDITORESQUE ORNATISSIMI,

CUM primum annuam Gulſtonii diſſertationem, ex veſtro liberali placito, mihi contigiſſe denunciatum eſt, in varia trahebant mentem variæ cogitationes, quarum nonnullas etſi ad prælectoris munus implendum accinctus videar, ſuum non omnino depoſuiſſe imperium nunc etiam plane ſentio. Quid ita me animi dubium effecerit omnes arbitror hujus collegii ſocios facile conjecturam facere, qui, poſthabitâ natali meâ

meâ regione, in illuſtrem ſuum ordinem me aſcribere non illepidum duxerunt. Dum enim ſermone Latino in hac præfatione utor, non poſſum non egomet audire unumquodque verbum proprio quodam oris ſono pronuntiari, et ſimul ac ad Anglicum devenerim illum quoque mihi eſſe peregrinum æque patefiat neceſſe eſt. Quapropter hiſce deterritus incommodis hanc honoris occaſionem recuſare aliquandiu conſilium erat: verùm etiam cum, ad alia converſus, hujus nobilis inſtituti finem, necnon in noſtræ ſocietatis officiorum functione ordinem aſſuetum reſpicerem; ſimul reputarem plurimorum officiorum me ſemper eſſe neceſſariò immunem, penitus otioſum remanere non honeſtum viſum eſt, et rei experimentum facere decrevi,

decrevi, ne denegatio, hoſpitem tam liberaliter receptum, aut negligentiæ, aut ruſticitatis, videretur arguere. Loco igitur elegantis dicendi rationis, vel accuratæ in recitatione pronunciationis (quam nemo niſi dum vernaculam loquitur linguam tenere poteſt) ſpero vos, Socii, Auditoreſque ornatiſſimi, hanc qualemcunque obtemperationis ſignificationem, necnon deſiderii rem medicam pro viribus promovendi, veſtrâ aſſuetâ facilitate et indulgentiâ accepturos.— Qui hanc lectionem inſtituit, vir eximiæ virtutis ſummæque erga homines benevolentiæ, id ſibi propoſuiſſe videtur, nempe ut medicorum mentem ad utilem quandam exercitationem multò magis quam ad ſplendidam orationem incitaret. Verborum enim ornatus ſæpius ad modum quàm

quàm ad rem pertinet. Ad majora ſpectabat Gulſtonius cujus propoſitum de variis febrium theoriis dicendo attingere aggredior, exequi autem poſſe minime confido.

C R I-

CRITICAL INTRODUCTION TO THE STUDY OF FEVERS.

LECTURE I.

AMONG the various complaints to which it has pleaſed the Creator of all things to ſubject Man, fevers are ſaid to be the moſt frequent. The familiarity of the word, as it has habituated mankind to remain ſatisfied with the uſual conſequence of fevers, ſo it ſeems to have induced the moſt inexperienced to think themſelves equal to their management: for it is a natural operation of the mind

to annex little importance to what is very common; and to transfer to the thing itſelf, moſt of the notions entertained about the name. Hence it happens that numbers of ſelf-taught, ſelf-created practitioners go about exerciſing their trade with the greateſt confidence, in the moſt unconſcious ſtate of mind; whilſt phyſicians lament that the individual nature of fever remains ſtill in obſcurity, and is ſtill a matter of doubt.

Fevers have been ſuppoſed to conſtitute two-third parts of the enemies of human life. We have only two ways of eſtimating the truth of this calculation; viz. by confining it to thoſe few diſeaſes which, for want of deeper knowledge, we are obliged to call by the moſt evident ſymptom, or by generally referring it to the quicker motion of the heart, a circumſtance which is found to take place in an infinite variety of diſorders. If viewed in the firſt light, fevers cannot be reckoned ſo frequent as has been aſſerted; if conſidered in the ſecond, they will perhaps be found to

bear a ſtill greater proportion to our other infirmities, becauſe neither the mind nor the body can be long affected without occaſioning that change in the circulation which is generally called *fever*. For want of accurately diſtributing caſes into one or other of theſe two claſſes, fevers have been thought, upon a ſuperficial ſurvey, to be the moſt common and the moſt dreadful of diſeaſes. It is not perhaps ſurpriſing that ſuch an opinion, erroneous as it may be, ſhould have been adopted: the increaſed velocity of the blood is a circumſtance of ſuch magnitude, that it might well engroſs the attention of phyſicians. Aſtoniſhed at its effects on the various functions, at the diſturbance it creates in the ſecretions, and ſeeing it accompany moſt of thoſe caſes that terminate unſucceſsfully, they naturally bent their thoughts on this phænomenon; looked upon it as acting the chief part in our diſſolution; and therefore deſcribed its various forms under a multiplicity of names, every one of which refers to this alteration in the ſanguiferous ſyſtem. But what we may

rather wonder at, is, the unſettled condition in which this important ſubject remains to this day: after the many attempts of men of application, obſervation, and ingenuity, in the courſe of two thouſand years, we are ſtill to wiſh on this head for an undiſputed definition, a ſatisfactory deciſion, a clear account of cauſes, and an eſtabliſhed method of cure. In ſhort, the labours of our predeceſſors in this rugged path have not yet enabled us to tread it without the greateſt caution.—As much as is conſiſtent with the limits of theſe lectures, I propoſe bringing back to your recollection the chief opinions of the ancients, examining the principal ſyſtems of the moderns, and delivering my ſentiments on both with that mixt degree of freedom and diffidence, becoming a man whoſe firſt object is the improvement of his Art; but who is not inſenſible of the honour of ſpeaking before one of the firſt, and moſt reſpectable Societies of Phyſicians in Europe.

The word by which the Greeks expreſſed

preſſed that alteration in the animal œconomy which we name *fever*, ſignifies in its literal acceptation *fire*: they were induced to take it from this root, becauſe the moſt ſtriking effect of this alteration is, in many caſes, the burning heat of the body. The Latin name from which the moderns have taken theirs may equally be derived from two words, the firſt of which implies the ſame idea with that of the Greeks; the ſecond alludes to a proceſs of Nature, by which the blood undergoes a change that ultimately tends to its purification: this laſt etymology, though not received by the Spaniards and Italians, who have inherited the greateſt ſhare of the Roman language, deſerves, however, ſome attention, as it ſeems to ſignify a more profound look into the nature and effects of theſe obſcure commotions. From this circumſtance I ſhould apprehend there was ſome reaſon to expect an inveſtigation of this ſubject, upon more enlarged principles than thoſe which at the firſt onſet led phyſicians to confound the effect with the cauſe: but Galen,

who thought fit to employ his extenſive genius and immenſe erudition, in ſupporting, explaining and enforcing the doctrines of Hippocrates, having, like him, adopted *heat* for the eſſence and cauſe of fevers; all ſubſequent writers, during a long courſe of time, awed by the reputation of the founder of phyſic, and the merit, powers and learning of his great commentator, looked upon this firſt point as eſtabliſhed and indiſputable: hence fevers were regarded as having in their nature ſomething ſacred and myſterious, againſt which human abilities were not able to contend. Recourſe was had to the Divinity; temples were erected in Greece to the God, in Rome to the Goddeſs, *Fever*; to which the maſters of the world reſorted in great numbers, in ſickneſs and in health, either intreating for relief, or deprecating ſuch a viſitation: they placed on her altars the remedies deſtined for the ſick, before they were adminiſtered, and did not fail to aſcribe their ſalutary effects to that ceremony; for which reaſon it mattered not much, I ſuppoſe, what was their compoſition.

ſition. We are not acquainted with the form under which this goddeſs was repreſented; but from an inſcription found in Tranſylvania, it appears that her titles were *divine*, *holy*, and *great*. So prevailing has been that propenſity of giving to fevers a ſupernatural origin, that even the purity of the Chriſtian religion has not entirely preſerved us from ſome ſuperſtitious taint in that reſpect; ſeveral paſſages having been adduced out of the Holy Scriptures, to prove that they are an inſtrument of the divine vengeance. Had theſe learned men been poets, and taken their quotations out of Homer's Iliad, all would have been well; but they were profeſſional interpreters of the divine law, and therefore we muſt endeavour to forget their extraordinary ſtretch of its holy ſpirit.

Hippocrates having, like his predeceſſors, admitted *heat* for the ſubſtance and cauſe of *fevers*, naturally enough eſtabliſhed his diſtinction of them on its different degrees of intenſeneſs, and gave to the ſeveral ſpecies which he obſerved,

names expreſſive of its different modifications. It may eaſily be ſuppoſed that a diſtinction, founded on ſenſations alone, is not ſuſceptible of much perſpicuity. Clearneſs is not at any time the chief merit of this author; but on this ſubject, whether you try to underſtand him from his deſcriptions at large, or to fix a preciſe meaning to his expreſſions, he is equally difficult and obſcure. Moſt of the paſſages in that voluminous collection which goes under his name, are equally perplexing; and it is remarkable that they are, comparatively ſpeaking, but few: there is, however, among his writings, another diviſion which implies a great deal of obſervation, and muſt for ever be attended to; that is, as they ariſe from a great common ſource, or from cauſes peculiar to individuals, moſt writers have adopted and mentioned it in ſome way or other.—His practice was, in ſeveral reſpects, derived from his manner of reaſoning on the cauſe; for in the diagnoſtic, he uſed to place his hands on the breaſt and abdomen of patients, and preferred forming a judg-

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ment of the caſe from his ſenſations of heat, rather than from the ſtate of the pulſe, the nature and connections of which he could not well underſtand: and among his few modes of cure, he directed pieces of linen dipt in cold water, to be applied on the hotteſt parts; drew blood away both by the lancet and cupping-glaſſes, and kept his patients on barley-water and honey; methods evidently derived from the notions he entertained of the diſeaſe, and by which he gives an example of connection between theory and practice, ſeldom admiſſible in our more elaborate modern ſyſtems. The reſt he committed to Nature, contenting himſelf with being her exact obſerver and faithful hiſtorian. The proofs of his aſſiduity and penetration in that important office, are commonly deduced from his doctrine of critical days (*a*), which, whether grounded on ſome unaccountable partiality of

(*a*) For the lateſt diſcuſſion of this famous point of medical controverſy, the reader may conſult *Doctrines of Hippocrates, &c.* p. 102, &c.

nature

Nature for certain uneven periods, or (which is more likely) eſtabliſhed on a few fortuitous caſes that favoured an ancient opinion, undoubtedly bears inconteſtable marks of the greateſt attention to every circumſtance; but, that a fame ſo well earned may not reſt upon a point that is not univerſally acknowledged, I beg leave to mention, on the authority of Celſus, the truth of his prognoſtics, as a leſs dubious ſign of his intimate acquaintance with diſeaſes, and eſpecially his diſcovery that fevers have not always a pernicious tendency; but that, on the contrary, they are often the ſalutary means of removing many obſtinate chronic diſorders.

Next to aſcertaining the principle of fever was, in point of importance and order, the finding out its principal ſeat; Galen took that upon himſelf with the great magnetic needle of his maſter conſtantly within ſight, analogy led him to fix it in the heart, and from his anatomical knowledge, being acquainted with the ſuperior muſcular ſtrength of the left ventricle,

ventricle, he boldly ventured upon deciding that fever originates in this cavity; he therefore rejected the opinion of Eraſiſtratus and Chryſippus, who thought it was ſeated in the motion of arteries, and defined it "an unnatural *heat* of the heart, injurious to its functions, and apt to ſpread itſelf, if not prevented, all over the body." I will not pretend to ſay that every thing he aſſerts about fevers is conſequent on this definition; though he wrote expreſsly on their differences, his ſentiments are rather diffuſively ſpread all over his works, than brought into one view in any part of them; neither do they appear to be the reſult of one ſettled way of thinking; but upon the whole, this is the doctrine he chiefly ſupports, and ſo tenacious is he of it, that in ſeveral places he maintains there cannot be any fever without the heart being affected. In order to reconcile to this poſition a number of facts ſeemingly unfavourable, and even contrary to it, he allows that other parts of the ſyſtem may at firſt prove the cauſe and origin of heat; but that the heart is

ſoon

ſoon affected in conſequence of theſe partial complaints. He goes ſtill further; for he refuſes the name of fever to that *heat* which ariſes from an affection of the liver, ſpleen, lungs, &c. not that, as might be ſuppoſed, he alludes to the diſtinction of *eſſential* and *ſymptomatic* fevers; but becauſe, according to his own words, the degree of heat excited by the inflammation of theſe viſcera is much leſs conſiderable than that which has its ſource in the heart, which is, in his opinion, the moſt inflammable viſcus, not even excepting the brains, and the moſt apt to communicate its inflammation to the other parts of the body. In ſeveral other parts of his writings, he mentions the great practical diviſion of fevers into eſſential and ſymptomatic as a doctrine long eſtabliſhed, and ſays, that the ancients confined the name of *fever* to that univerſal heat which takes place without any particular inflammation, abſceſs, or eruption. As to thoſe patients who labour under an inflammation of the ſide or lungs, or any other part, they were not ſaid (he tells us) to have a fever, but

but to be *pleuritic*, *peripneumonic*, &c. In the firſt place, fever was conſidered as the illneſs; in the ſecond, as accidental. Unwilling to omit any opportunity of mentioning Hippocrates to advantage, he informs us, that whenever this author makes uſe of the expreſſion *feveriſh diſorder*, we are to underſtand *eſſential* fever, and not the ſymptomatic ſort; — upon which it may be obſerved, that in this interpretation Galen is more commendable for the deſire of honouring the memory of his maſter, than for the likelihood of his conjecture; for after putting the moſt favourable, and even partial conſtruction on the few expreſſions that might be thought to refer to ſo material a diſtinction, there is no reaſon to ſuppoſe that he was acquainted with it. This muſt have been found out by ſome adherents to thoſe different ſects, that, during a period of ſix centuries, eſtabliſhed themſelves in ſupport of, or in oppoſition to, his principles; and of whoſe writings we have no other knowledge than by the

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ſlight mention of Celſus, or the few frag ments preſerved in Galen's works.

A man endowed, like Galen, with great powers for invention and reaſoning, could not content himſelf with barely aſſerting that the *heat* of the heart conſtitutes fever; he, therefore, laboured to conceive and explain the manner in which ſuch a change happened; but as it would be treſpaſſing on the indulgence of this ſociety to enter at large into ſo ſpeculative and ſo uſeleſs a diſcuſſion, I ſhall confine myſelf to the reſult of his inferences; by which it appears, that he underſtood two modes of generation for this morbid heat; the firſt, when the innate heat, from ſome cauſe or other, acquires that degree of intenſeneſs which he calls *igneal*; the ſecond, when, by the admixture of *putrid* ſubſtances, the heart grows inflamed. Thus, without departing from his definition, he admitted the ancient axiom, "that all fevers ariſe from putridity," into ſome ſhare of action. Amidſt this cloud of fanciful thoughts, ſtrange reaſonings, and obſcure expreſ-

expreſſions, one might, without any great ſtretch, diſcern the foundation of our moſtly-received modern diviſion of fevers into *inflammatory* and *nervous*; not that I mean to hint, that this opinion of the moderns has been formed on the authority of Galen, nor that they have been in the leaſt led to it in conſequence of his writings, but only to obſerve, as a fact rather remarkable, that by paths ſo very diſtant from one another, and by a train of reaſoning ſo widely different, the eccentric ſpeculations of the one, and the accurate obſervations of the others, have brought them both to nearly the ſame concluſion. As an admirer of antiquity, I might be tempted to leave Galen in the advantageous point of view in which this accidental compariſon has placed him; but the proſecution of the plan I have traced, and to which theſe lectures are an introduction, requires that I ſhould mention the three genera of fevers he eſtabliſhed, viz. the *ephemera*, *humoral*, and *hectic*, with his manner of accounting for their different characters, be-

cauſe

cauſe moſt of the fevers that have been deſcribed ſince his time, are in a great meaſure connected with theſe, and moſt of the opinions that prevail, even in theſe days, concerning their ſeats, are reducible to thoſe he aſſigns. Without having expreſsly ſaid it, there can be no doubt but he conſidered the animal economy as compoſed of three principal parts, which he names *ſpirits*, *humours*, and *ſolids*. The inflammation of the ſpirits alone he conceived to be the cauſe of an *ephemera*; if the *humours* caught the flame, he called it an *humoral fever*; and if the *ſolids* themſelves did not eſcape the conflagration, then the fever was reckoned to be in the habit, that is to ſay, *hectic*, which ſignifies *habitual*. This fragment of theory may appear, in our preſent ſtate of knowledge, extremely inſignificant and unintereſting; but thoſe phyſicians who, having ſpent a conſiderable part of their time in ſtudying the medical claſſics, are glad to find ſome gleanings in that immenſe field as a compenſation for their labour, will, I hope, join me in remarking, that if Galen

Galen went out of his depth, and loſt himſelf in endeavouring to explain the different periods and protractions of fevers from ſo vague a ſuppoſition, there is, notwithſtanding, a fund of thoughts and reflections in conſidering the human machine according to his idea, and in admitting, as he did, that every one of theſe conſtituent parts may be the cauſe of fever; nor is it any great detraction from his merit, that what he meant by *ſpirits*, is not, perhaps, to be explained from his own words, in a manner conſonant to our notions, ſince it is evident, that when he ſeparated it from *humours* and *ſolids*, he muſt have had in view ſomething of a different nature, and conſequently, at leaſt moſt probably, analogous to that unknown agent which we call the *nervous fluid*.

By conſidering theſe fevers as ſimple and complicate, that is to ſay, as they ariſe from the alteration of one or ſeveral ſorts of fluids, he eſtabliſhed ſeveral ſpecies, eſpecially of the putrid kind; ſuch as his *malignant* fever, in which he ſup-

poſed the heart to be not only inflamed, but alſo oppreſſed by a venomous infection. But it is ſufficient to have related his fundamental principles. What is moſt remarkable in the reſt of his obſervations, is his diviſion of the hectic fever into eſſential and ſymptomatic. The firſt made part of a ſyſtem which he never had the reſolution to correct; the ſecond was the reſult of experience, which he had too much ſenſe and penetration to miſinterpret or overlook.

Concerning intermittents, he deviated a good deal in his manner of accounting for them from his theory of continued fevers. The ancient notion, that all fevers ariſe from putridity, which, in deference to Hippocrates, he rejected, at leaſt partially, ſeems, in the contemplation of intermittents, to have had much influence on his mind, and, perhaps, to have given riſe to his doctrine of the four *peccant humours*. He imagined that the *blood*, *phlegm*, *yellow* and *black bile*, are liable to fall into a putreſcent ſtate, and to be the cauſes of reciprocal diſeaſes, which, communicating

to the heart their noxious impregnations, occaſion fevers of different types. To putreſcent phlegm he aſſigned the origin of *quotidians*, to yellow bile that of *tertians*, and to black bile he attributed the riſe of *quartans*. All other intermittents of longer intervals he refuſed to admit, though acknowledged by Hippocrates. Which remarkable inſtance of exception to his general rule of conduct being not explained by himſelf, muſt be attributed to the difficulty he found in explaining paroxyſms of ſo diſtant a recurrence, according to the number of fluids he reckoned ſuſceptible of putridity. The moſt material difference between his practice and that of his maſter, is the boldneſs with which he bled his patients: he ſometimes ſuffered them to faint away from the loſs of blood before he would ſtop; which made a byſtander obſerve once, that he had *ſlaughtered the fever*. From this circumſtance it may be inferred, that though he has commented a good deal on the critical days of Hippocrates, his faith in them cannot have

been implicit, ſince he was not afraid of diſturbing their natural courſe: neither is he likely to have looked on fevers with that deep penetrating eye which diſcovered in them a ſalutary effect, ſince he generally tried to extinguiſh them at firſt.

I cannot take leave of Galen without expreſſing my opinion, that had he been leſs ambitious of dazzling his cotemporaries by the multiplicity of his productions, or rather, had he not been tormented (if I may ſay ſo) by an over-fruitful imagination, which gave him no reſpite, no time for mature reflection, he would have proved as uſeful to the Art as, notwithſtanding all his errors and dreams, he is ſtill wonderful.

Such was the ſtate of knowledge, or rather of opinions, concerning the nature of fevers, to the days of the Arabs, who, as it is well known, lighted their taper at the torch of the Greeks:—their adopted doctrines they delivered for their own, and, on that foundation, erected a

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ſuperſtructure, which laſted but a ſhort time. Avicenna, the chief of their writers went farther than Galen in the ſame theory; for he maintained that all fevers ariſe from a preternatural heat of the heart; whereas Galen had confined that origin to eſſential fevers of the continued type. He eſtabliſhed alſo ſeveral diſtinctions of his own, ſome of which, as thoſe into acute or not, long or ſhort, have been the prolific text of many a long diſſertation, without having their limits aſcertained, or throwing any light on practice; others are inſignificant and uſeleſs, as that into diurnal and nocturnal; and ſeveral have no foundation in nature, as that continued ſpecies, which, from beginning to end, conſtantly increaſes, or conſtantly leſſens, or always remains in the ſame ſtate. Upon the whole, though phyſic at large is, in many reſpects, under obligations to the writers of that nation, one may ſay, without injuſtice, that the doctrine of fevers received from them no improvement, or even alteration, worth recording; and as

the great numbers of phyſicians who wrote from the thirteenth to the ſixteenth century employed themſelves in commenting their books, compoſing on the ſame principles, or in tracing up to the Greek fountain the ſtream of their knowledge, it follows, that in order to conſider this ſubject in a different and more propitious light, we muſt come to the days of the great Sydenham.

LECTURE II.

MANY ages were elapſed ſince men had begun to employ their mental faculties on the two great objects of their purſuits—enjoyment in health, and relief in ſickneſs; many ſciences and arts had arrived at a great degree of eminence; the world, in many reſpects, looked old, and medicine was ſtill in its infancy. From her tardy ſteps, it would ſeem as if the deſire of improving our earthly poſſeſſions was greater than the wiſh of extending them; or that the time of illneſs, conſtituting generally but a ſmall proportion of life, and this being neceſſarily limited to a certain period, the acquiſition of an art ſo moderate in its promiſes, and ſo uncertain in its effects, formed but a ſecondary ſubject of conſideration. To this manner of accounting for the ſlow progreſs of ſo noble a ſcience, it may be objected, that the great number of writers it has produced is a ſufficient teſtimony that its

want of ſucceſs cannot be aſcribed to the want of cultivation.—I allow the ſtrength of that argument; ſtill, however, may it remain a queſtion, whether the profeſſion of phyſic being held by the bulk of mankind in an inferior degree of eſteem, the greateſt abilities were not directed towards more attractive views, and this uſeful branch of knowledge ſuffered to be the lot of leſs elevated minds? I am inclined to this way of thinking, by obſerving in its hiſtory the moſt unequal features, in its improvements nothing gradual, and, in its preſent ſtate, evident marks that its valuable acquiſitions are much leſs the work of time than the gifts of a few men of genius. Among them none is more conſpicuous than the Engliſh Hippocrates, the great Sydenham:—this accompliſhed practitioner, though well acquainted with the valuable part of ancient learning, though reverencing its authors (as becomes every claſſical ſtudent to do), never followed the flock of their admirers in their blind imitations;—like a good tranſlator, who, regardleſs of the literal meaning of words, infuſes

infuſes into the mind the ſpirit of his author; he looked up to nature as to the great original from which the Greeks endeavoured to copy. Without arraigning them of infidelity, he thought proper to ſee with his own eyes; and, having brought his mind into this pliable frame, he began the practical ſtudy of diſeaſes with a diſpoſition that left him the full exerciſe of his reaſon an dunderſtanding. Leſs deſirous of acquiring a tranſitory fame by the diſplay of great erudition, than eager to pry into the ſecret operations of nature, he obſerved her with a free diſengaged mind, ſaw deeper than his predeceſſors into many cauſes of her diſtreſs and ſtruggle, ſucceeded better in his modes of aſſiſtance, and proved to his ſucceſſors an uſeful and ſafe guide; for this reaſon particularly, that, as on all occaſions he appealed to his judgment, and thought for himſelf, he induces every phyſician to do the ſame. How much the practice in general is indebted to him, all medical men know, and I am ready to ſubſcribe; but if, in mentioning his theories and notions

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of fevers, which are the immediate ſubject of my inquiry, I ſhould venture to make a few ſtrictures, I ſhall hope for a ſhare of that indulgence which his writings taught me to expect, and to grant, in every liberal inveſtigation.

Sydenham divided fevers chiefly into epidemic and intercurrent, as they attack great numbers of people, or ſeem to ſingle out a few individuals: a diſtinction ſimilar to that of Hippocrates. The firſt he ſuppoſes to have ſo many, and ſo eſſential differences, that as the common courſe of life is not, in his opinion, ſufficient to obſerve them, ſo the knowledge of the moſt experienced practitioner cannot enable him to treat them ſucceſsfully, till, inſtructed by miſtakes, he has diſcovered their genuine character. Having remarked that epidemics ſometimes preſerve the ſame type for ſome years, he called theſe *ſtationary*, to diſtinguiſh them from the intercurrents, or ſporadic, which, though generally mixed with all kinds of fevers, and ſpreading leſs extenſively, ſometimes, however,

however, prove alſo epidemic. Theſe are, in his own words, " the ſcarlet fever, pleuriſy, baſtard peripneumony, rheumatiſm, eryſipelatous fever, the quinſy, and, perhaps, ſome others." Contrary to the notions of the ancients, who confined the name of fever to thoſe diſeaſes in which there is no particular affection, he looked upon the fever that accompanies theſe complaints as the primary diſeaſe, and on the ſymptoms from which they generally derive their names, as the conſequence of either the peculiar manner of the criſis, or of the part principally affected. The cauſes of epidemics he attributed to the air, thoſe of the intercurrents to peculiar diſpoſitions. But having found, after carefully watching the conſtitution of the atmoſphere for ſeveral years, no connection between its manifeſt qualities and the genius of diſeaſes; on the contrary, having repeatedly experienced that years, perfectly ſimilar as to the manifeſt temperature, gave, nevertheleſs, riſe to very different complaints, and *vice verſâ*; he was induced to adopt the extraordinary opinion,

opinion, that there are conſtitutions or ſtates of the air of great influence on health, that owe their origin neither to heat, cold, dryneſs, nor moiſture; but rather depend upon a certain ſecret, and inexplicable alteration in the bowels of the earth, whence ſpring ſuch kinds of effluvia as ſubject the human body to particular diſtempers, ſo long as that conſtitution prevails, which, after a certain courſe of years, declines, and gives way to another; and that each of theſe general conſtitutions is attended with its own proper and peculiar kind of fever, which never appears in any other. As to the evident and ſenſible qualities, he allows they may have ſome ſhare in producing theſe intercurrent fevers which appear in every conſtitution of the atmoſphere, or even may diſpoſe the body to receive the influence of the reigning epidemic; but abſolutely denies them the power of producing the epidemics themſelves. The nature of intercurrents he reckons ſubordinate to that of epidemics, in as much as the firſt frequently participate of the character

character of the laſt; and when that is the caſe, they are no longer (he ſays) to be conſidered nor treated in the manner of eſſential diſeaſes, but according to the method which the prevailing fever requires. In order to diſtinguiſh between theſe two ſtates, he informs us, that it is of moment to conſider, whether the ſame ſymptoms which accompany the beginning of the prevailing ſtationary fever take place likewiſe at the ſame ſtage of the intercurrent—This circumſtance being the guide we are to follow in practice.—Whereas, when the intercurrent is the eſſential diſeaſe, it attacks in the ſame manner at all times, having nothing at all in common with the ſtationary.—This is the ſummary of the cleareſt and moſt conſiderable part of his doctrines concerning fevers: a doctrine peculiar to himſelf, extremely ſpecious from his manner of eſtabliſhing it, and the more attractive, becauſe the author conſtantly profeſſed himſelf an enemy to ſpeculations. That he was not ſo in reality, his works abundantly prove; and from them

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alſo may be derived ſeveral objections to the texture of his ſyſtem. For example, his diviſion of ſome epidemics, as intermittent fevers, into vernal and autumnal, with conſtant marks of greater benignity in the firſt, does not much favour the cauſe of occult qualities in the air; neither does the appearance of bilious and dyſenteric complaints, ſo frequent in autumn, induce one to believe that the ſenſible temperature acts no part in theſe diſorders. For, in the firſt place, the increaſe of heat in the atmoſphere, though gradual, and almoſt imperceptible, by which the animal fluids are rarefied, and their veſſels expanded, will, upon common philoſophical principles, account for many revolutions in the human economy. In the ſecond, the chills of autumnal evenings, after a warm day, and the exerciſe it has invited us to take, muſt appear an adequate cauſe to the various diſorders that ariſe from a checked perſpiration: moreover, the influence of cold ſucceeding heat, being in itſelf greater than that of heat ſucceeding cold, with the conſideration,

ſideration, that in one caſe the effect is always ſudden, whereas in the other it is generally gradual, muſt enable us to conceive, why the diſeaſes of the ſpring, unleſs ſuddenly fatal, as it happens ſometimes, are more eaſily cured, and why thoſe of the autumn are more deeply rooted.

His diſtinction of regular and irregular epidemics is another obſtacle to the admiſſion of his theory; for how can it be conceived, that a hidden alteration in the air, ſufficiently powerful to affect, at the ſame time, a multitude of people, ſhould have "no one fixed form or conſtant appearance," but occaſion a variety of ſymptoms diſſimilar in their riſe as in their retreat? If the cauſe is one and the ſame, how can the effects be many and different? If the effects are various and oppoſite, how can they be aſcribed to the ſame cauſe?—Should it be ſaid, that different organization may give to one morbid principle different appearances, it will be anſwered, that Sydenham refuſes to particular diſpoſitions

poſitions any ſhare of power, either in producing or even modifying the great prevailing cauſe of epidemics.——If we give our attention to his remark, that many epidemic fevers appear in the ſame year, but that one or another rules over the reſt, and that in the ſame proportion the reigning one increaſes, the others loſe ground; we ſhall find ourſelves equally at a loſs to imagine, how a particular occult quality in the air can be productive of various diſorders, which, being divided between one imperious and ſeveral ſubſervient ſorts, are in a perpetual ſtate of warfare about the ſuperiority. But not to dwell any longer on this part of the argument, as derived from his own principles and ſtatement of things, which defeat themſelves, and cannot ſtand the teſt of mutual compariſon; let us examine its original ſource, viz. the qualities of the air.—What reaſons have we to ſuppoſe, that theſe qualities are occult, and derive a noxious power from ſecret revolutions in the bowels of the earth? or how can it be underſtood, that revo-

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lutions of this kind may take place? The only phænomena from which it appears probable to draw ſuch a ſuppoſition, are earthquakes and volcanoes; both of which moſt likely depend on the ſame cauſe, and are momentary convulſions equally unconnected, from experience as well as from reaſoning, with internal diſeaſes: for we do not find that the inhabitants of thoſe parts of the globe which are, from time to time, liable to ſuch a viſitation, inſert among their misfortunes the riſe of any peculiar fever. But if it ſhould be ſuppoſed, that the ſeeds of illneſs with which the air is impregnated in thoſe conjunctures are prevented exerting their power on the ſpot, being carried away and ſpread according to the direction of the wind; it may be anſwered, that ſuch a ſuppoſition is contrary to the knowledge we have lately obtained on that ſubject. From repeated experiments, there can be no doubt but that the air acquires by diſtance, or even by time, the power of freeing itſelf from heterogeneous admixtures; and that, conſequently, the mor-

bid particles with which it may happen to be corrupted, neither can remain for a long while in an active ſtate, nor ſpread extenſively. Beſides other reaſons for this aſſertion, it may be ſufficient to mention, that Dr. Prieſtley, to whom this intereſting branch of natural philoſophy is ſo much indebted, obſerved, that the moſt unwholeſome kinds of air ſent him from different manufacturing towns and workſhops, had, by ſome means or other, brought themſelves, during the journey, very near the common ſtandard. If that is the caſe, when it is pent up, a much ſhorter time muſt effectuate its purification when it has a free communication with the general maſs.——It has been imagined, that the velocity of the earth, in its double motion, may be the cauſe of great internal revolutions; but ſince this velocity, immenſe as it is, never varies, it may, with greater reaſon, be conſidered as deſtitute of influence in this reſpect.—As to the alterations which the earth receives on its ſurface from the different works and undertakings of man, theſe

theſe ſeldom are ſo conſiderable as to affect the air in any degree, and never ſo ſudden as to produce any great and immediate change. The earth may, therefore, be ſaid to be in a paſſive ſtate, and to derive, from the various influence of the ſun, thoſe differences in her atmoſphere, which render it, at times, pleaſant and wholeſome, at others, comfortleſs and unhealthy. Upon the whole, there is no manner of neceſſity to ſuppoſe occult qualities: the manifeſt ones, variouſly combined with the different diſpoſitions of bodies, and other circumſtances, are fully ſufficient to account for all the fevers in which air is concerned. Indeed Sydenham ſeems to have thought ſo himſelf, when, loſing ſight of his ſyſtem for a moment, he delivers it as his opinion, that moſt fevers are occaſioned by *cold*; that more lives have been loſt by its effects than by the plague, ſword and famine together; and that both *ſtationaries* and *intercurrents* are frequently cauſed by its action;—upon which, forgetting his original idea, that fevers are infinite in their

varieties, he concludes by ſaying, that whoever knows how to expel the febrile matter, either by bleeding, ſweating, purging, or any other more proper way, muſt have the beſt ſucceſs in the cure of all fevers.—But Sydenham was an experienced practitioner when he ſaid this; whereas he was young when he formed his notions concerning the cauſes of fevers, and when he wrote the Hiſtory of the Firſt Four Years Epidemics; an hiſtory greatly inferior in every eſſential point to the others, but which, for want of leiſure and health, he never had reſolution to reviſe and correct. Subſequent writers, leſs attentive to the reſult of his vaſt experience and knowledge, than ſeduced by the ſpecioufneſs of his theories, adopted the idea that fevers, being of a vaſt number, the beſt method of acquiring a thorough knowledge of them, is to deſcribe their varieties in the manner that botaniſts do plants. This thought, coeval in Sydenham's mind with that of myſterious revolutions in the interior parts of the earth being the inexhauſtible ſource of fevers, ought to have

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been given up with the ſuppoſition from which it ſprung; but having in itſelf ſomething attractive, eſpecially for a botaniſt, has proved the cauſe of multiplying the names of fevers to ſuch a degree, that *memory* ſeems to be more concerned than *judgment*, in the practical part of this new ſyſtem.

The firſt who undertook to give it a ſhape, was the illuſtrious *Sauvages*, a man as much qualified as it is poſſible to conceive, in point of erudition and indefatigable induſtry, to do honour to his author's ſpeculation. He began by conſidering from what circumſtances the characters of diſeaſes were to be aſcertained, and having, with great reaſon, reſolved to take them from ſymptoms, rather than from cauſes, which are oftentimes uncertain and obſcure, he propoſed aſcertaining their ſpecies according to ſymptomatic differences: however, either unmindful of his original plan, or finding too great a ſimilarity in ſymptoms, to ſupply him with ſo many ſpecies as he fancied he ſhould deſcribe

in imitation of *botaniſts*, he mentions in the very title of his ſpecies, the cauſe from which they are ſuppoſed, according to his opinion, or that of others, to ariſe: hence it happens, that inſtead of writing an hiſtory of the different kinds of fevers, as diſtinguiſhed by manifeſt ſigns, he has in fact written an elaborate account of cauſes, to every one of which is ſubjoined a deſcription of feveriſh ſymptoms, ſo far from being peculiar to any one, that they ſeem applicable to all: and as the number of cauſes from which fevers may be occaſioned, or with which they may be connected, is not inconſiderable in itſelf, much leſs ſo ſtill, if reckoned on the authority of every writer, as Sauvages thought himſelf obliged to do, it follows that in peruſing his work, the memory is oppreſſed with the number of ſpecies; the judgment miſguided with the difficulty of underſtanding imagined diſtinctions; and the mind dejected at the ſight of ſo many enemies to human life: for example, the *ephemera*, conſidered by all writers as the ſimpleſt fever, has no leſs than *eleven*

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ſpecies in his noſology; and theſe being collected from ſeveral authors, moſt of whom would give them names of their own, ſimplicity is ſoon out of the queſtion. Beſides, contrary to the etymology of the word, he extends its duration to three or four days, ſo that it is no eaſy matter to diſtinguiſh it from the *ſynocha*. Fortunately the diſtinction is not here very material, as the genius of both is allowed to be much the ſame; but when you come to the *ſynochus*, of which he mentions no leſs than *fourteen* ſorts, the names by which they have been ſpecified often imply a total diverſity of character: and under that load of difficulties and contradictions, the ſtudent, after many hours of application, is at a loſs to recollect what genus of fever he ſat down to read.

Many learned phyſicians who, in the courſe of their education, have thought it their duty to make themſelves acquainted with every ſyſtem, but who, after deliberately weighing the *matter* and the *manner* in the ſcale of experience, judged it neceſſary to make the former the conſtant ſubject

of their obſervation, and leave the latter to itſelf, would perhaps feel ſome ſurpriſe upon recollecting that the celebrated wr ter, on whoſe ſyſtem I take the liberty of expreſſing my opinion, after eſtabliſhing twelve genera of fevers, has deſcribed no leſs than three hundred and two ſpecies.—At the ſame time that I deliver theſe objections with freedom, I think it neceſſary to obſerve, that nothing can be farther from my intention, than to reflect on the general merits of this laborious performance, which contains a treaſure of medical information, and will always remain, notwithſtanding its great defect, as a ſyſtematic work, a vaſt repoſitory of fine obſervations, great views, and uſeful knowledge.

The tranſition from Sydenham to Sauvages, being the moſt natural in point of connection, has induced me to neglect the order of time, in reſpect to Boerhaave, whoſe ſyſtem of fevers is followed to this day in ſeveral parts of Europe, though not in Great Britain. This illuſtrious phyſician, poſſeſſed of the richeſt ſtore of medical

knowledge, eminently ſkilled in the various branches of his art, equally converſant with ancient and modern opinions, did not think fit to purſue the line marked out by Sydenham: he contented himſelf with expreſſing his approbation, in general terms, as a tribute which was due from every body to the ſpeculations of a man by whoſe ſagacity practice had received ſo many improvements, and mankind ſo much benefit; but never attempted to give a form to his ideal conceptions of mathematical accuracy. So far from perceiving that analogy between accidental and changeable qualities, and regular manifeſt organizations, which made Sydenham aſſert that *a quartan fever is as much a ſpecies, as a plant*, he endeavoured, by conſidering fevers as diveſted of that infinite number of ſymptoms which often accompany them, but without which they may alſo exiſt, to inveſtigate their individual nature: with that view, in imitation of *Fernelius*, he examined, deſcribed, and explained every general ſymptom by itſelf; and having thus proceeded towards his

his object, he ſurveyed it in a clearer and purer light. Among its numerous retinue, he diſcerned three principal circumſtances, which he ſuppoſes always to take place, at one time or other, in every fever that ariſes from internal cauſes; viz. a ſhivering ſenſation, increaſed velocity in the pulſe, and greater heat than natural; but the velocity of the pulſe being the only one of the three that from the beginning to the end never diſappears, he looked upon it as the only certain ſign of the exiſtence of *fever*, and concluded that it is the only mark from which phyſicians ought to form their rule of practice. As to *heat*, he thought it an effect, and not a cauſe, having obſerved that, inſtead of occaſioning theſe emotions, it follows them. The proximate cauſe of increaſed velocity in the blood he aſſigned to the quicker contractions of the heart, which, for the greateſt part of his life, he ſuppoſed to be owing only to the ſtagnation of fluids in the extreme veſſels at the time of the cold fit; but afterwards admitted might poſſibly take place from the agency

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of the nervous fluid. Thus it appears, that if he did not, like *Eraſiſtratus*, fix the ſeat of fevers in the increaſed motion of the arteries, he conſidered that circumſtance as the only criterion of its exiſtence; and, like *Fernelius*, from whom perhaps he had taken the idea, looked upon *lentor* in the fluids as the proximate cauſe of that increaſed reſiſtance in the *capillaries*, to which he attributed the three great leading ſymptoms of all internal fevers. This way of proceeding was not likely to be productive of many ſpecies: in fact, he reduced thoſe he found eſtabliſhed to a much ſmaller number. — His ſyſtem, ſupported by the clear energetic manner in which he explained it in his lectures; by his unbounded reputation as a practitioner; and, afterwards, by the immortal commentaries of his great pupil, became the univerſal theme of every ſchool in Europe.

There was, however, a cotemporary of his, not leſs diſtinguiſhed than himſelf by great medical acquiſitions, who endeavoured

deavoured to point out a different ſource of fevers in a principle of the conſtitution till that time very much overlooked. Whether, unſatisfied with former theories, his own genius led him to ſeek deeper into the operations of nature; or, deſpairing to cultivate the ſame ground with greater ſucceſs than his predeceſſors, he caught the few hints thrown out on this ſubject by ſome anterior writers as likely to form the baſis of a new ſyſtem; certain it is, that we are indebted to *Hoffman* for opening a new mine of experiments and inquiries.

If the celebrity of *Boerhaave* retarded the progreſs of his rival's doctrine, and by fixing the attention of phyſicians on obſtructed capillary veſſels, prevented their early reſearches into the powers of the nervous fluid as a cauſe of fever, the ſubſequent labours of many writers, and the application of their diſcoveries to the ſyſtem of *Hoffman*, have made him ample compenſation for that temporary neglect.

Hippocrates had ſaid, that beſides the

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containing and *contained* parts, there is an *impetuous power*, τα ορμωντα, which ought to be the ſubject of contemplation; Galen had referred a ſpecies of fever to ſomething unknown, which he called *ſpirits*; *Willis* had written the pathology of nerves; *Hoffman*, with theſe few materials, attempted an hiſtory, which gave riſe to the ingenious experiments of *Haller* on irritability and ſenſibility, as well as to the improvements of *Gaubius* on the theory of *Boerhaave*. The celebrated Profeſſor of North Britain collected theſe ſcattered fragments, and made them the foundation of his doctrines, in lieu of thoſe of Boerhaave, which, as he informs us himſelf, were reigning in full force at the time he began to teach phyſic at Edinburgh. Under the influence of his patronage, and of his uncommon abilities, it has acquired an almoſt univerſal prevalence, with an apparent degree of conſiſtency, and of extenſive application to the different phænomena of fevers, which it never received from its original author. Having altered the poſition laid down by Boerhaave,

haave, that in every fever there are three principal circumſtances, ſhivering, velocity of pulſe, and heat; into one, no leſs liable to exceptions, viz. that every fever has a ſtate of debility, of cold, and of heat: he aſſerted, in addition to that maxim, that every fever, of more than one day's duration, conſiſts of ſeparate, and, in ſome meaſure, repeated paroxyſms: in oppoſition to many writers, he confined the length of each paroxyſm, in its moſt extended form, to leſs than twenty-four hours, in conſequence of a ſuppoſed ſubjection of the animal œconomy, in all its operations, to a diurnal revolution. For the cauſe of paroxyſms, he aſſigned the ſpaſm of the ſmall arteries, with a proportionable effort in the conſtitution to remove it; derived from the different degrees of violence in the ſpaſm, the reaſon of intermittent, remittent, and continued forms of fevers; maintaining with Sydenham, that ſometimes fevers of a very continued type belong to the claſs of intermittents; whilſt others, with ſeparate and repeated paroxyſms, are of the continued ſort: and

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looked upon this ſpaſm as the effect of ſome noxious power applied to the body, which he ſuppoſes to ariſe either from *human* or *marſh effluvia*, both of which he reckons of a debilitating or ſedative quality, and originating from putreſcent matter; from which it follows that this train of ſuppoſitions and facts, notwithſtanding his diſregard for ancient authority, brings us back to the theory anterior to Galen, *that all fevers come from putridity*. Theſe are the principal outlines of Dr. Cullen's ſyſtem of fevers; not leſs remarkable for the ingenuity with which he renders it plauſible, in his manner of unfolding its principles, and applying it to the different forms of fevers, than for its effects on the mind of its celebrated author; who, from a degree of partiality, greater than paternal, for this adopted child, has been induced to think it equal in miſchievous power to *Pandora's box*, has, therefore, acquitted morbific matter, plethora, cacochymy, even *cold*, in a great meaſure, from the ſhare of guilt

guilt with which they had long been accuſed; and expreſſes his concern that Hoffman ſhould have intermixed ſuſpicions of this ſort, after having once got a glimpſe of this great fountain of evil.

LECTURE

LECTURE III.

WHOEVER reflects on the different manner in which it has been attempted to explain the nature and cauſes of fevers; on the ingenuity with which almoſt every ſyſtem is made to appear probable at firſt, though eaſily found inſufficient afterwards; muſt find it extremely ſurpriſing, that, notwithſtanding the vigorous efforts of the ſeveral writers that have been mentioned, ſo great and ſo many difficulties ſhould ſtill remain unſurmounted. It is not yet decided, whether the ſeat of fevers lies in the *heart*, according to *Galen*; in the *brain*, as *Mornton* will have it; in the *meſentery*, if you believe *Baglivius*; in the *pancreas*, according to *Sylvius*; in the ſmall *ramifications* of arteries, as many moderns ſuppoſe; or in the *ſtomach*, as a conſiderable number of practitioners are inclined to think: neither is it aſcertained, whether the cauſes of them are *infinite* and *obſcure*, as it pleaſ-

ed Sydenham to fancy; or *evident* and *few*, according to ſome modern notions. With regard to their different forms, we are ſo far from having determined their reſpective limits, that the names of *intermittent*, *remittent*, and *continued*, are often taken for one another, and every one of them often given to the ſame fever, by different writers. For example, that ſpecies which many authors have called *continent*, from obſerving, in its whole courſe, no mark of remiſſion, or of exacerbation, is ſaid, in the lateſt noſology, to conſiſt of ſeparate and repeated paroxyſms, to reſemble much an *intermittent*; but, in reality, to belong to the claſs of *continued*. Thus the very types of fevers, generally thought ſo material a circumſtance, on which ſo great a ſtreſs is laid in every ſyſtematic arrangement, are found ſo very uncertain, that one ſpecies appears to deſerve a greater number of them than our late noſologiſt thinks proper to admit; for he rejects the continent ſort. If we inquire into the ſubdiviſions of the reſpective claſſes, we ſhall find the ſame contra-

riety of ſentiments: in the intermittent, for example, the *quotidian* is rejected by ſome, and the *double tertian* ſubſtituted in its place; whereas, others not only admit the *quotidian*, but alſo a *double quotidian*, a *double* and *triple quartan*, and a *ſemi-tertian*; which laſt, though ſuppoſed to have three ſpecies by ſome writers, is denied to exiſt at all by ſome others. Paroxyſms of a longer interval, of five, ſix, ſeven days, a month, even a year, though generally looked upon as anomalous, are not, however, without advocates for reckoning them regular ſpecies. *Malignant* fevers, the very mention of which excites fear, and which make ſo conſiderable a part of the hiſtory of diſeaſes, are not acknowledged as *fevers* by ſome authors; and by others, of very great eminence, are refuſed the leaſt right to the title of malignity. There is no end of ſimilar inſtances of confuſion in claſſes, and of contradictions in characters: but the moſt remarkable of them all, in my conception, is that in a ſyſtem, which teaches, that all fevers originate in a few cauſes

ultimately reckoned *putreſcent*, no place can be aſſigned, it is ſaid, for *putrid* fevers.

From ſuch a diverſity of ſentiments in theory, a reader, unacquainted with the practice of phyſic, would naturally expect an infinite variety in the methods of cure. On this point, however, it happens fortunately for the good of mankind, and the credit of the profeſſion, that the notions of phyſicians, which in ſpeculation are ſo much actuated by an eccentric and divergent force, acquire on a ſudden, in the moment of action, a remarkable tendency towards uniting, as if under the influence of a common attractive power. For, excepting a few, like *Lobb* and *Clutton*, in this country, who, ſuppoſing all fevers to have but one principle, employed a particular method of their own, and adhered to it in all caſes, practitioners generally apply their modes of aſſiſtance uniformly, and follow the ſame indications much in the ſame manner.

Is there, then, no connection between theory

theory and practice? no uſe in ſtudying ſyſtems which are generally formed for inſtruction?—Secondly, Is there no poſſibility of placing this ſubject in a point of view equally favourable to practice and theory? — I ſhall endeavour to anſwer theſe two queſtions. In the firſt place, when a phyſician compoſes a ſyſtem, he naturally wiſhes to diſtinguiſh it from preceding ones by ſome appearance of novelty. Imagination is more ſucceſsful in producing novelty than experience, and is, therefore, oftener applied to; but when health, when life, is in queſtion, the importance of the truſt does not permit him to follow any other guide than his judgment. Hence it may not be ſurpriſing, that the ſame perſon, being placed in two ſituations ſo different, ſhould think differently. It is alſo to be conſidered, that *ſymptoms*, however various in number and degree, impreſs on the mind more diſtinct, more preciſe, and more laſting notions than *cauſes*; which, being always more obſcure, and generally leſs important, lay not ſo great

a reſtraint on reaſoning, leave a greater ſcope to the fancy, and, conſequently, produce more fluctuating ſentiments.—For theſe reaſons, *theory* is not ſo nearly connected with *practice* as, for the improvement of the art, it could be wiſhed; and, therefore, ſyſtematic writers may be ſaid to make an exception to the common maxim, "that the beſt part of an author is in his writings." At the ſame time it may be obſerved, that, beſides the propriety (not to employ a ſtronger expreſſion) of making one's ſelf acquainted with the prevailing opinions of thoſe men, whoſe fortune it has been to ingroſs for a while the attention of candidates, to direct their thoughts, and, probably, to influence their practice, many advantages reſult from ſtudying their works. The very motive which impels them to dedicate their leiſure to contemplation, and to explore the myſterious origin of diſeaſes, is commonly productive of ſome diſcovery ſerviceable to the art. In the ſame manner that *chymiſts*, in their reſearches after an univerſal remedy, have found

found out ſeveral which, properly adminiſtered, remove many diſorders, and, collectively taken, are beneficial to all; the various modes of explaining fevers, which, ſeparately conſidered, are inſufficient, will, perhaps, one day, by their united aſſiſtance, enable us to extract from them a ſatisfactory ſolution. It is not improbable that we might, by this time, have been brought nearer this great point, had ſyſtematic writers followed the method of *navigators*; who, in the proſecution of arduous attempts, prudently avail themſelves of the obſervations and errors of their predeceſſors, and, by this two-fold advantage, aſcertain at length the true ſituation of their object, and the ſafeſt way to it. But the deſire of diſtinction which, more or leſs, prevails among all ranks of men, ſeems to act with ſuperior power on *phyſicians*: their wiſh of contributing to the advancement of the art is too often ſubordinate to the deſire of increaſing their own fame. This excluſive paſſion, which, it is to be hoped, never influences their private conduct, is

eaſily perceivable in their writings, and prevents their availing themſelves, ſo much as they might, of what has been done by others. Hence the great difference of opinions, the intricacy of the ſubject, the difficult attainment of uſeful knowledge—in one word, the ſlow progreſs of the ſcience.

With regard to the ſecond queſtion, viz. Is there no poſſibility of placing this ſubject in a point of view equally favourable to practice and theory, and thereby eſtabliſhing a connection between both? —I cannot help thinking it not only poſſible, but even leſs difficult than might be ſuppoſed, from the great diſtance at which they have been hitherto kept. Many reaſons incline me to believe, that *fever* is no *diſeaſe* in itſelf; that, in all caſes, it is *ſymptomatic* of ſome affection; and that it never is *primary* or *eſſential*. Where the diſturbance of functions points out the ſeat of the diſorder, *fever* is unanimouſly called *ſymptomatic*; but if the part affected is not obvious to the ſenſes,

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it is reckoned *eſſential:* whereas, it is more natural to think, that as in many caſes fever is a ſymptom of a *particular* affection, it alſo is a ſymptom when the affection is *general. Fever* ſeems to be *Nature's common ſignal of diſtreſs,* which on moſt occaſions ſhe diſplays for relief, though very variouſly. Sometimes, unneceſſarily alarmed, ſhe expreſſes her fears in too forcible accents; ſometimes, though dangerouſly ſituated, her voice is with difficulty heard, as if unable to raiſe it, or inſenſible of her danger. In ſome caſes, ſhe points out the ſeat and cauſe of her trouble; in others, ſo many places are attacked at once, that ſhe thinks it uſeleſs to mention any particularly. At times, confiding in her own powers, ſhe ſoon quells the diſturbance ſhe had occaſioned, and, by repeated exertions, repels ſucceſſive attacks; at others, impreſſed with a conſtant ſenſe of danger, ſhe either unremittingly ſignifies her ſituation, or allows herſelf but a few moments of reſt. Sometimes alſo, as if under the various influence of hope, fear,

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and inceſſant anxiety, her ſignals are as irregular as her ſenſations, and keep her obſervers at a loſs to underſtand her meaning.——In all caſes and ſituations, *fever* ſeems to be only a ſignal, and, therefore, implies the neceſſity of inquiring further into cauſes and particulars. That nature ſhould generally chooſe this mode of expreſſing her want of aſſiſtance, appears eaſily accountable from her manner of proceeding throughout her infinite productions, and from the principles on which the human conformation is eſtabliſhed. In every work, either divine or human, there are ſome parts neceſſarily more eſſential than others, endowed with greater conſequence, more materially concerned in the good order of the whole;—theſe great wheels, on the good ſtate of which the preſervation of the machine depends, are alſo liable to experience ſome alteration from the derangement of the remoteſt parts of the ſyſtem. On the free unimpeded functions of the heart and brains certainly depends the preſervation of life, and of

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thoſe purſuits for which alone life is deſirable. But theſe two great leaders of the human economy depend alſo, for the maintenance of their ſtate, on the ſound, unimpaired conditions of their many reſpective ſubſervient parts; and ſeldom, therefore, fail being appriſed of their diſorders, and endeavouring, by unuſual exertion, to reſtore the general harmony. Had nature fixed upon leſs important functions for ſignifying her need of help, ſhe might have been neglected; but by exciting frequent contractions in the heart, or affecting the mental faculties, ſhe was certain of being attended to. Her reaſon for expreſſing herſelf in theſe two languages (if I may ſay ſo) inſtead of one, is equally wiſe and prudent:—by the firſt, ſhe intimates the power and inclination of exerting herſelf; by the ſecond, ſhe indicates her inability to do much, and her want of immediate ſupport.

If the derangement of any part of the body has the power of exciting, in the heart,

heart, ſtronger and more frequent contractions, it follows, that the circulation is liable to frequent and various alterations, from a great number of cauſes: that the degree of this alteration depends on many circumſtances, ſuch as the ſtructure of the part affected, its degree of irritability, that of the whole ſyſtem, &c. &c.; that the time during which it may laſt depends entirely on the removal of the cauſe, which, in many caſes, muſt be a matter of great uncertainty; that, therefore, the attempt of deſcribing the effects of ſo many and ſo various cauſes, and of their ſeveral combinations, under the names of ſpecies, or the endeavour of explaining them, from ſmall arteries being obſtructed by viſcid blood, or contracted by ſpaſm, is extremely unpromiſing.——The idea of comparing *fevers* to *plants*, or of accounting for their multiform appearances from any ſingle circumſtance that is ſuppoſed always to accompany them, is equally founded on ſpeculation alone, and is open to ſo many objections and exceptions, that after conſuming

ſuming ſeveral years in that ſort of contemplation, the ſtudent, upon leaving his books, and coming to a ſick bed, either finds his memory at a loſs to refer the caſe to any recorded inſtance, or his judgment embarraſſed in trying to underſtand it, from the confined principle which he has been taught to conſider as the cauſe of every form of fever; whereas, if inſtructed to look upon fever as a ſign of ſome *particular* or *general* affection, and accuſtomed to take ſymptoms as his guide for diſcovering the efficient cauſe, every caſe will ſupply him with opportunities of applying his notions of *theory* to *practice*, and of deriving from the one ſome rules of conduct for the other.——Should the ſpeciouſneſs of accuracy, which the plan of botanic arrangement of fevers undoubtedly carries with it, render ſome people averſe to rejecting it, they might reflect, as has been ſuggeſted before, that there is no foundation for ſuch a ſimilarity; that the eſſential requiſites of likeneſs are wanting in this compariſon; that it is a mere imagination, deſtitute of ſubſtance.—

ſtance.—Botaniſts having collected eighteen or twenty thouſand plants, from different parts of the globe, and obſerving in their ſize, in their frame, in their flowers and leaves, conſtant marks of ſimilarity, or evident lines of diſtinction, naturally thought of facilitating the acquirement of that ſcience, by dividing thoſe numerous productions into claſſes, families, orders, &c. with a reference of every ſpecies to one or other of theſe heads.—In doing this, they proceeded upon a ſure ground, and worked upon a certain, decided, poſitive ſubject, which, excepting very few varieties, may be ſaid to be, at all times, conſtantly one and the ſame. But phyſicians, in endeavouring to diſtribute fevers in ſimilar claſſes, labour under unſurmountable difficulties. If it is poſſible to eſtabliſh two or three general claſſes, it is abſolutely impracticable to ſubject ſpecies to any tolerable regularity. From age, ſex, mind, body, habit, diet, circumſtances, and accidents, they are, and ever muſt be, ſo different, and ſo numerous, that every caſe may be ſaid to be

be a new one, or, at leaſt, to have, like every face, ſomething belonging to it alone which diſtinguiſhes it from others. To enumerate theſe varieties, would not be leſs arduous than to deſcribe the imperceptible marks by which every man is different from others:—the difference is ſoon perceived; but would require a metaphyſic language to admit of a particular deſcription, becauſe it often depends as much on the ſtate of the mind as on muſcular ſhape. Beſides, to compare *qualities* always accidental, ſuch as pain, cold, heat, thirſt, weakneſs, delirium, &c. to *qualities* neceſſarily inherent in the ſubject, and inſeparable from matter, as length, wideneſs, ſhape, &c. is a licence in logic unlikely to produce, in any ſyſtem, that regularity which the author had in view, and by which others have been captivated.

On the other hand, the ingenuity exerciſed in endeavouring to make all forms of fevers originate in one or two cauſes, as human and marſh effluvia, beſides that experience

perience clearly contradicts such a supposition, is equally inefficacious in directing instruction towards its only useful end. Reducing the number of causes, when the effects are infinite, is an unlikely means to produce attention to a number of circumstances on which success commonly depends. On the contrary, it confines the thoughts within a narrow circle, and prevents their extending themselves in a manner proportional to the boundless operations of nature. That *effluvia* from morbid bodies, impregnated clothes, and moist ground, are a prolific and powerful source of fevers, does not admit of a doubt; but it is equally certain, that fevers of this tribe are generally confined to people of a certain description, whose situation, in point of air, diet, exercise, cleanliness, and amusements, keeps them for a long while perfect strangers to the comforts of life. These fevers must, therefore, have a great similarity, as arising from one cause; they must spread rapidly, the communication being almost immediate; and their treatment must be

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nearly uniform.—If any ingenious writer ſhould think fit to ſee nothing like morbific matter in their cauſes, but in his public lectures ſhould teach, that a noxious power, applied to the body, occaſions a ſpaſm in the capillaries, which ſpaſm creates fevers: if he ſhould prefer the expreſſion of *noxious power* to that of *morbid matter*, and chooſe for an inlet into the conſtitution the pores of the ſkin, which, for the greateſt part, are commonly covered, rather than the tubes leading to the lungs and ſtomach, which are always open; and by thoſe predilections in terms deny to vitiated fluids any ſhare of action as a cauſe, or to muſcular fibres the ſuſceptibility of any material alteration in tone, but refer the whole miſchief to a diminution of the energy of the brain; the only anſwer to ſuch particularities is, that the languages of civiliſed nations admit of various modes of expreſſing the ſame thing; and that the difference of mental organiſations lead to a ſimpler or more complicate mode of explanation for the ſame appearances. But ſhould he ſuppoſe that ſome

particles of theſe effluvia, being brought into great cities by currents of air, and remaining unchanged by diſtance, or uncorrected by a warmer atmoſphere, are equally and excluſively productive of fevers; the ſame manner of anſwering will prove inſufficient. One muſt neceſſarily wiſh for a further explanation of the following diſcordant phenomena, viz. how thoſe morbid particles ſeldom operate, as they did at firſt, almoſt univerſally? Why, ſo far from having an uniform effect, they are productive of the moſt oppoſite ſymptoms, and require oppoſite methods of cure? How, being conveyed by the air, they preſerve their malignant influence, contrary to the experiments that have been mentioned, and contrive to apply themſelves to the ſkin, notwithſtanding the interference of warm clothes, and eſcape being pumped in by reſpiration, the mechaniſm of which does not allow of any precautions? Theſe and ſeveral other difficulties muſt require great exertions of ingenuity to be tolerably reconciled. Such a ſyſtem, by excluding many remote cauſes,

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againſt which mankind have been accuſtomed to guard themſelves, contradicts general experience: and, by referring every phenomenon to the ſame proximate cauſe, reduces the varieties of Nature's operations to a fancied regularity of which they are not ſuſceptible. It leads from one ſpeculation into another, requires the help of ſeveral ſuppoſitions to appear conſiſtent, and, when all this is granted, does not bring us much nearer the point towards which all ſyſtems ſhould be directed, I mean eſtabliſhing a connection between theory and practice.

Since the practice in fevers does not, like their theories, occaſion a great diverſity of opinions, the moſt likely method of rendering theory uſeful, is, to deduce it from the modes of cure generally eſtabliſhed. It is equally rational, in endeavouring to diſcover their individual nature, to proceed from what is known to what remains undecided. Both theſe premiſes induce us to conſider *fever* as a ſymptom, which many cauſes occaſion; and

to account for its ſeveral forms and circumſtances from *variety* in cauſes, and *difference* in conſtitutions: towards the proſecution of this plan, and of the proofs of its being eſtabliſhed on facts, it is already a great ſtep that we know the art of producing *fever* by various methods, and that accidents have ſupplied us with ſeveral certain cauſes of its exiſtence. *Baglivi* made a number of experiments on dogs, and other animals, by pouring into their veins, or mixing with their food, liquors of different qualities; and by thoſe means excited fevers that differed in degree, duration, and event, according to the quality and doſe of the mixture infuſed.—A thorn driven into a tendon, or a tooth piercing its way through the gums, will give riſe to a fever, attended by the moſt alarming ſymptoms, with ſuch an alteration in the fluids, as frequently to incline phyſicians to think them the cauſe of the diſturbance before the ſeat is diſcovered.—A degree of exerciſe too violent for the ſtrength of the muſcles often produces an univerſal ſoreneſs, and a *fever* which is not

not always ſtopped by reſt and refreſhment.—The ſmalleſt drop of the variolic poiſon being inſerted under the cuticle, excites, after a few days, a violent and dangerous fever, which does not abate till the greateſt part of the humours, which it has aſſimilated to its own infectious nature, breaks out upon the ſurface of the body, and ceaſes to irritate and offend the more important viſcera.—The cutting of a pen, accidentally received into the lungs of a child, occaſioned, for more than a year afterwards, a fever, attended with ſizy blood, and other marks of inflammation, which never left him till he luckily coughed up the irritating ſubſtance, upon which he immediately grew well. From theſe few facts we ſeem therefore authoriſed to aſſert, that the *fluids*, the *ſolids*, the *nerves*, and even the *mind*, are ſuſceptible of various alterations that produce fever: and if, in a variety of caſes, fever is proved to be ſymptomatic, what inducement is there to think it eſſential in a few? Is it not more conſiſtent with the methods purſued in other ſciences to judge

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of what we know not, from what we know; and, reaſoning from analogy, to preſume that the ſame cauſes which, in moſt inſtances, are determined towards ſome particular parts, producing peripneumonies, pleuriſies, &c. are ſometimes carried through all the mazes of the circulation, occaſioning inflammatory continued fevers? that the ſame matter which, being fixed on the tonſils, brings on a malignant ſore throat, when remaining univerſally ſpread, cauſes a putrid fever? that, in the ſame manner that a ſolid ſubſtance irritates the nerves, incorporeal cauſes may affect the mind, which is their inviſible principle? and that, from the different modifications and combinations of theſe great cauſes, ariſe a multitude of ſpecies, too great for deſcription?—This manner of conſidering fevers, beſides the reaſons that induce me to think it the true one, is attended with ſeveral advantages; it explains a number of anomalities; reconciles different opinions; at leaſt derives ſome uſe from every one of them; it connects *theory* with *practice*, ſimplifies, in

many reſpects, the method of ſtudy, and promiſes improvement in the methods of cure, by directing the mind towards inveſtigating *cauſes*. — I cannot, in a few words, convey my meaning more intelligibly than by the following compariſon: —The multitude of ſaline combinations with which *Nature* and *Art* abound, though too numerous for obſervation to aſcertain, or for memory to comprehend, is, however, moſt probably the reſult of an only principle, more or leſs intimately united with other ſubſtances; various, and infinite, as theſe combinations are in appearance and properties, they all contain more or leſs the pure *vitriolic acid*, which is the only ſubſtance eſſentially *ſaline*: in the ſame manner, the diſeaſes which are accompanied with *fever* are innumerable, our powers are too much confined to mark their difference, aſcertain their ſeat, or limit their varieties; but through all its various forms, and different periods, *fever* ſeems to be unalterably one, and individually *ſymptomatic*.

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PERORATIO.

QUOD ad naturæ febris illuſtrationem, necnon ad theoriæ praxeoſque conjunctionem, maxime pertinere judicavi, vobis jam, illuſtriſſime præſes, auditoreſque ornatiſſimi, ſi non pro rei amplitudine, ſaltem pro viribus, exponere conatus ſum: ſine enim inter theoriam et praxin arctiori connectione nulla ſpes effulget artem medicam omnium nobiliſſimam et antiquiſſimam utiles progreſſus facere poſſe. Quantum febrium theoria hâctenus fluctuaverit, et cujuſvis opinio protuentis ingenio, aut authoritate valuerit, in animum veſtrum revocare meum fuit propoſitum. Id tantum igitur ſupereſt, nempe ut, poſthabitis magiſtrorum verbis, non ſcientiæ famam ſed ipſam ſcientiam, ipſam veritatem, quæramus. Ad illam autem inveniendam, ab abditis, et ab intellectu remotis, ad principia quæ ſenſus evidentiam admittunt, confugiamus neceſſe eſt. Ea vero nihil aliud ſunt quam experimenta et ſyllogiſmi geometrice concatenati. His innixum principiis decet inveſtigatorem veri non ſolum quæ legerit, ſed et quæ ſecum ipſe meditando conſideraverit, in communem fructum proferre.